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ABSTRACT:

PROBLEM TO BE SOLVED: To provide nitrided parts excellent in machinability and nitriding properties of the steel even if normalizing treatment after hot forging is omitted and furthermore excellent in fatigue characteristics an bending straightening properties.

SOLUTION: A steel having a ferritic-pearlitic structure in which the average dimension of the crystal grains of ferrite is regulated to ¡Ü50¦Ìm and the average dimension of the crystal grains of pearlite is regulated to ¡Ü50¦Ìm as hot-forged and having a compsn. contg. 0.15 to 0.40% C, ¡Ü0.50% Si, 0.20 to 1.50% Mn and 0.05 to 0.50% Cr, and the balance Fe with inevitable impurities is prepd. The steel is subjected to gas soft-nitriding treatment to regulate the average hardening depth to ¡Ý0.3mm and the fluctuation of the hardening depth to ¡Ü0.1mm. The steel may contain ¡Ü0.50% Ni, ¡Ü0.50% Mo, 0.005 to 0.030% N, ¡Ü0.3% V, ¡Ü0.3% Nb, ¡Ü0.2% Ti, ¡Ü0.2% Zr, ¡Ü0.2% Ta, 0.01 to 0.3% S, ¡Ü0.3% Pb, ¡Ü0.05% Ca, ¡Ü0.2% Bi and ¡Ü0.05% Te.